How can there be more than 2 electrons in an energy level?

Doesn't this contradict the Pauli exclusion?

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Pauli's exclusion principle applies to fermions. Moreover, to weakly interacting fermions! For strongly interacting fermions, Pauli's principle does not apply. In general, three electrons with corresponding spins (+, -, +) are equivalent to one fermion with spin (+1/2). This is the answer to the question! That is why, in chemistry, the existence of full-fledged three-electron bonds is possible, for example, in benzene and other compounds [1].

That is, three electrons with opposite spins (+, -, +) form a classical covalent chemical bond with a multiplicity of 1.5. Naturally, this bond is itself a fermion with spin +1/2, and therefore it can additionally interact with other fermions (electrons, three-electron bonds, etc.). The interaction of these fermions is the essence of chemistry. Moreover, the interaction of three-electron bonds in the benzene molecule with each other fully explains the phenomenon of aromaticity of organic compounds [1].

Finally, here is a quote that discusses the Pauli exclusion principle as applied to chemical bond [2]:

"The Pauli exclusion principle — this is the fundamental principle of quantum mechanics, which asserts that two or more identical fermions (particles with half-integral spin) can not simultaneously be in the same quantum state. Wolfgang Pauli, a Swiss theoretical physicist, formulated this principle in 1925...

According to Pauli exclusion principle in a system consisting of identical fermions, two (or more) particles can not be in the same states...

the wave functions... given in the reference (this is a standard consideration of the fermion system), but we will concentrate our attention on the derivation:

"...Of course, in this formulation, Pauli exclusion principle can only be applied to systems of weakly interacting particles, when one can speak (at least approximately on the states of individual particles)" [81].

That is, Pauli exclusion principle can only be applied to weakly interacting particles, when one can talk about the states of individual particles. But if we recall that any classical chemical bond is formed between two nuclei (this is a fundamental difference from atomic orbitals), which somehow "pull" the electrons one upon another, it is logical to assume that in the formation of a chemical bond, the electrons can no longer be regarded as weakly interacting particles...

...in the chemical bond, the electrons "lose" their individuality and "occupy" the entire chemical bond, that is, the electrons in the chemical bond "interact as much as possible", which directly indicates the inapplicability of the Pauli exclusion principle to the chemical bond. Moreover, the quantum-mechanical uncertainty in momentum and coordinate, in fact, strictly indicates that in the chemical bond, electrons are a system of "maximally" strongly interacting particles, and the whole chemical bond is a separate particle in which there is no place for the notion of an "individual" electron, its velocity, coordinate, energy, etc., description. This is fundamentally not true.

The chemical bond is a separate particle, called us "semi-virtual particle", it is a composite particle that consists of individual electrons (strongly interacting), and spatially located between the nuclei".

1. Bezverkhniy V. D. Structure of the Benzene Molecule on the Basis of the Three-Electron Bond. SSRN Electronic Journal (2017). https://dx.doi.org/10.2139/ssrn.3065241 , https://vixra.org/pdf/1606.0152v1.pdf
2. Bezverkhniy V. D. Bezverkhniy V. V. Review. Benzene on the Basis of the Three-Electron Bond. (The Pauli Exclusion Principle, Heisenberg's Uncertainty Principle and Chemical Bond). SSRN Electronic Journal (2017). P. 104-105. https://dx.doi.org/10.2139/ssrn.3065288 , https://vixra.org/pdf/1710.0326v4.pdf
3. Quora: How can there be more than 2 electrons in an energy level? Doesn't this contradict the Pauli exclusion? https://qr.ae/pNSvma